

Skull practically as in *sinensis*, though the bullæ appear to average rather smaller.

Dimensions of the type (measured on a rather shrunk skin):—

Head and body 380 mm.; tail 30; hind foot 83; ear 65.

Skull: greatest length 81; basilar length 59; zygomatic breadth 37·5; length of nasals (diagonally) 37; interorbital breadth 16; palatal foramina $19 \times 7\cdot5$; length of tooth-row (on alveoli) 14·7.

Another specimen has a hind foot measuring 87 mm.

Hab. Formosa; type from Baksa.

Type. Adult male. B.M. no. 93. 12. 5. 6. Collected 4th March, 1893, by P. A. Holst; presented by Henry Seebohm, Esq. Three young skins also received from the same source. Another specimen obtained on Mt. Arizan by Mr. A. Owston's collectors.

This hare may be readily distinguished from *L. sinensis* by its much paler colour, that animal having the pale rings on its dorsal hairs varying from buffy to ochraceous, thus giving a very much warmer tone to the whole animal.

It is, however, to be noticed that Consul Swinhoe recorded *L. sinensis* as a native of Formosa*, and that the one adult skin (no. 62. 12. 24. 16) of his collection sent as from the island is certainly more like *sinensis* than *formosus*. Whether, however, both forms occur in Formosa, or whether this specimen has been wrongly labelled, are questions which can only be settled when the mammal fauna of the island is more completely known. But considering the uniformity among themselves of all the specimens, young and old, that are unquestionably from Formosa, I am inclined to think that the specimen referred to has been incorrectly labelled.

PROCEEDINGS OF LEARNED SOCIETIES.

GEOLOGICAL SOCIETY.

December 4th, 1907.—Sir Archibald Geikie, K.C.B., D.C.L., Sc.D.,
Sec.R.S., President, in the Chair.

The following communications were read:—

1. 'The Faunal Succession in the Carboniferous Limestone (Upper Avonian) of the Midland Area (North Derbyshire and North Staffordshire).' By Thomas Franklin Sibby, B.Sc., F.G.S.

The area dealt with is the irregularly-shaped periclinal mass

* P. Z. S. 1862, p. 359.

forming the southern end of the Pennine anticline, with a few small outliers. The base of the Limestone is not shown, and the whole series exposed constitutes a greatly-expanded development of the uppermost zone of the typical Avonian succession of the South-Western Province, namely, the *Dibunophyllum*-Zone. The most extensive section—that along the Midland Railway, between Longstone and Buxton—shows a thickness of about 1500 feet. Three subzonal divisions are distinguished, as follows:—

- D₃. Subzone of *Cyathaxonia rushiana*: represented in the South-Western Province by horizon ϵ and the lower part of the Millstone Grit.
- D₂. Subzone of *Lonsdalia floriformis*: correlated with the Upper *Dibunophyllum*-Zone (D₂) of the South-West.
- D₁. Subzone of *Dibunophyllum* θ : correlated with the Lower *Dibunophyllum*-Zone (D₁) of the South-West.

An abnormal development of the *Lonsdalia*-subzone, consisting of richly-fossiliferous brachiopod-beds, in which the typical coral-fauna has very little representation, forms a conspicuous local feature in various parts of the western half of the area. The passage-beds between the Carboniferous Limestone and the Pendleside Series are included in the *Cyathaxonia*-subzone. Locally, these passage-beds attain a thick development. A local unconformity between the Carboniferous Limestone and the Pendleside Series, indicating contemporaneous elevation and erosion, occurs in the eastern part of the area. A close general similarity exists between the *Dibunophyllum*-Zone of the Midland area and that of North Wales. These two areas should be regarded as constituting a Midland Province. A comparison of the *Dibunophyllum*-zone of the Midland with that of the South-Western Province brings out the following more important differences:—(a) The brachiopod-fauna of the *Lonsdalia*-subzone of the Midland Province is considerably richer than that of the equivalent part of the South-Western sequence. (b) The *Cyathaxonia*-subzone of the Midland Province, which attains a maximum development in Derbyshire and North Staffordshire, is practically undeveloped in the South-Western Province.

The paper concludes with a description of certain corals and brachiopods from the Midland area, some species and varieties being new.

2. 'Brachiopod Homœomorphy: "*Spirifer glaber*."' By S. S. Buckman, F.G.S.

The smooth, catagenetic, stage of shells may have been attained by the loss of different distinctive features, pointing to polygenetic origins. The series of shells figured by Davidson as *Spirifera glabra* do not all agree in being smooth; some are radially costate, some have a pronounced mesial fold, others hardly any, some are very transverse, others are narrow. There is good evidence that several of the forms ranged under this species are *Reticularia* (McCoy), more or less smooth. Thus *Sp. obtusus*, regarded by Davidson as a synonym of *Sp. glabra*, shows faint reticulation, has

the dental plates, and must be classed as a *Reticularia*; while quite smooth forms with similar plates also occur (*Sp. lata*, Brown, and *Sp. glaberrimus*, de Koninek). But other forms called *Sp. glabra* seem to have been derived from radially costate ancestors. The use of the generic name *Martinia* for various smooth Spiriferids of the Devonian and Carboniferous thus becomes wholly unjustifiable, as it simply denotes a stage of catagenetic development at which several different stocks of Spirifers arrive. As the outcome of this study the Author restricts the genus *Spirifer*, and allocates several British and foreign species among the genera *Fusella*, *Choristites*, *Trigonotreta*, *Brachythyris*, *Martinia*, and *Reticularia*. He also gives in an Appendix a revised explanation of Davidson's plates xi & xii of the Monograph of Carboniferous Brachiopods.

December 18th, 1907.—Sir Archibald Geikie, K.C.B., D.C.L., Se.D.,
Sec.R.S., President, in the Chair.

The following communication was read:—

'Some Recent Discoveries of Palæolithic Implements.' By
Sir John Evans, K.C.B., D.C.L., LL.D., F.R.S., For.Sec.G.S.

By the courtesy of Mr. Worthington Smith, the Author is enabled to call attention to some recent discoveries of Palæolithic implements on the southern borders of Bedfordshire and in the north-western part of Hertfordshire. In addition to the discovery of a Palæolithic floor at Caddington brickfield, at between 550 and 590 feet above sea-level, implements have since been found on the surface of the ground at 600 and 760 feet respectively; while a good ovate implement was found in thin, water-laid material, at 651 feet O.D. In Hertfordshire, Palæolithic implements have been found at Great Gaddesdon, at a brickfield about $1\frac{1}{2}$ miles north-east of Hemel Hempstead, and at Bedmond, 2 to $2\frac{1}{4}$ miles south-east of the last locality. The drifts which cap the hills in North-West Hertfordshire seem to be of very variable origin; and a great part of the material is derived from clay-deposits of Eocene age, but little remaniés. It seems to the Author that it is safest not to invoke river-action for the formation of the high-level deposits, which extend over a wide area and are in the main argillaceous and not gravelly or sandy in character, but to adopt Mr. Worthington Smith's view that in early times lakes or marshes existed in these implementiferous spots, the borders of which were inhabited by Palæolithic Man. The evidence that he has brought forward as to the implements having, in some of the Caddington pits, been manufactured on the spot, most fully corroborates this view.